

Ch 19 HW Quiz #2A

A small disk with a mass of 21.3 grams and charge $-844\text{ }\mu\text{C}$ is moving with an initial speed of 38.0 m/s in the +x direction across a smooth, horizontal surface. There is a uniform electric field in this region of 138 Volts/meter pointing in the +x direction. A little jet of air shoots continuously from the disk, helping to slow the disk down (it provides an applied force in the opposite direction of the motion). The disk slides 102 meters before coming to rest. Assume the electric force and the applied force of the air jet are the only forces that are relevant in this problem (gravity and the normal force are also present, but they cancel out and do no work).

- a) How much work is done by the electric force on the disk during this motion?
- b) How much work is done by the applied force of the air jet during this motion?